DIGITAL ACOUSTICS

IP7 SERIES

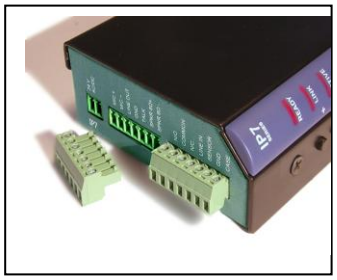
IP/ETHERNET AUDIO SOLUTIONS

. . . clearly making waves

Flexible IP7 Series Products power the most demanding intercom and paging applications. Voice-quality audio is delivered over Ethernet/IP in local area (LAN) and wide area networks (WAN). The series' modular, IP edge-device design provides for superior scalability in applications of all sizes-- assuring success today and in the future.

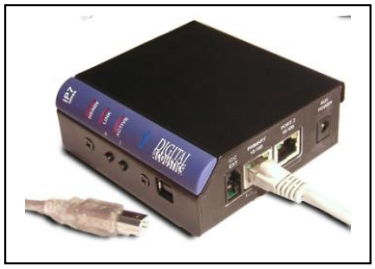
IP INTERCOM SYSTEMS

- ☑ Unique design and flexibility supports both new and retro-fit applications
- ☑ Converts analog call station or speaker for IP-based two-way communications
- ☑ Durable Industrial Design with DIN rail mount or surface mount
- ☑ On-board relay and sensor for door/gate access control and management
- ☑ Multicast Protocol enables seamless, clear, low bandwidth audio distribution
- ☑ Flexible Audio I/O supports Electret or Dynamic microphone and Line In/Out
- ☑ Operates over wired, wireless or fiber networks



ST/STX IP Intercom

- Simple configuration and easy installation
- Clear, crisp audio using 64 kbps bandwidth
- Power over Ethernet (PoE) and DC support
- STX includes Integrated 2-Port Ethernet Switch
- Audio Out drives Analog Amplifiers as IP Zone Extenders



SE8 High Power IP Intercom

- 8-Watt Audio Amplifier
- Power over Ethernet (PoE) and DC support
- Integrated 2-Port Ethernet Switch
- Relay and Sensor Support
- Designed for high noise applications

Applications

- Door/Gate Communication and Access
- Classroom Intercom and Paging
- Building, Campus, Corporate Communication
- Remote Monitoring Talkback
- Area of Rescue Intercom

Vertical Markets

- Education
- Security / Monitoring
- Transportation
- Industry
- Government

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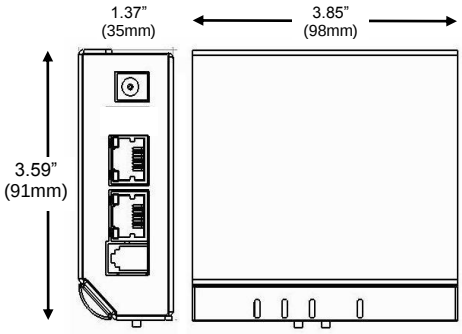
HARDWARE SPECIFICATIONS

	ST	STX	SE8
Network Protocols	TCP, UDP, RTP, SIP, ARP, ICMP, IGMP Multicast		
Network Interface	10/100 Base-T Ethernet, Auto-MDIX		
Network Ports (RJ-45)	1	2	2
Core Technology	ICC-256 50 MIPS SoC (System On A Chip)		
IP Address Assignment	Static, DHCP		
Transport Bandwidth	64kbps Nominal (Voice)		
Audio Protocol	G.711. 8/16bit PCM/uLaw		
Audio Latency	<200ms		
Audio Line In/Out	Nominal 1V p/p		
Amplifier Type	Class D, Balanced Transformerless (BTL)		
Speaker Out (8Ω / 25-70V Line)	1 Watts	1 Watts	8 Watts
Microphone	Balanced, Pseudo-Differential / AGC > 40db		
External I/O	Relay: 250 VAC / 30VDC @ 60W / 1500 VAC Isolation; Sensor Input: External Active Low		
Expansion Bus	I2C for multiple relays, data acquisition sensors, displays, keyboards – requires custom integration.		
Power Voltage (Nominal)	9-32VDC	9-32VDC	12VDC
Power Wattage (Nominal)	5	5	15
PoE Standards	802.3af (15.4W)		
Diagnostics	LED Status, USB, Temperature and Power Monitoring		
Programming	Flash programmable via USB, Ethernet		
Fault Management	Patented Fail-Forward™ fault detection		
Connector I/O	3.81 MM DIN Pluggable, RJ45, USB-B, RJ10		
Direct Peripheral Support	Mic In, Line In, Speaker, Line Out, PTT, Relay (NO/NC), Sensor, I2C		
Temperature	-30~70 C (Operating), -40 C~85 C (Storage)		
Size	3.85 x 3.59 x 1.37 in (98 mm x 91mm x 35mm)		

CE FC RoHS COMPLIANT

PHYSICAL SPECIFICATIONS



Ordering Information:

Hardware

Part #	Spkr Out	Pwr	Ethernet	Other
IP7-ST	1-Watt	PoE	Single	
IP7-STX	1-Watt	PoE	Dual	
IP7-SE8	8-Watt	PoE	Dual	High Output Speaker

Includes: DIN Mounting Clip, 3.81 MM Plugs

Software

Part #	Description
TM-LE	Single Console Command Software (Included)
TM-EE	Multi-Console Command Software
TM-SMG	SIP Media Gateway (VoIP Access)

SOFTWARE APPLICATIONS

- **TalkMaster™ LE -** Single console intercom and paging installations. Control and configure all intercoms and paging amplifiers from a single computer. Paging groups easily allow the console operator to send microphone or pre-recorded messages to groups of intercoms.

- **TalkMaster™ Enterprise Edition -** Multi-console command software for sophisticated installations with 1000's of IP audio end-points. Control and configure intercoms and IP paging amplifiers from central console. Multiple computer consoles can share and control grouped or individual intercoms and paging amplifiers.

- **TalkMaster™ SMG - SIP Media Gateway** integrates the TMEE Intercom and Paging System into any SIP Version 2.0 compliant VoIP telephony system.
  - Assign Intercom and Paging end-points to telephone extensions.
  - Create and manage paging groups.
  - Create out-dial extensions so intercoms can call mobile phones.

SOFTWARE DEVELOPMENT KITS

- **TMEE Hardware SDK** - For developing client-server or single console applications. The DLL controls the IP Socket connections, provides a "Call Back" mechanism to report events and delivers the raw audio stream allowing your application to playback or transfer it to another computer or device. No GUI elements are included.

- **TMEE Console SDK** - Used to create custom Console applications that integrate with TMEE Server. The DLL communicates through the TMEE Server for all intercom communications. Each instance of a custom application requires a TMEE Console License. Allows you to leverage all the capabilities of the TMEE Server.

DIGITAL ACOUSTICS ® PRODUCT FAMILY

Intercoms and I/O Expansion products

ICC™ based IP Paging and Intercom board products

Speaker solutions to fit your specific needs

Software Development Kits

Integrate intercom and paging solutions into your application.

TalkMaster Enterprise Edition

- TMEE Hardware DLL
- TMEE Console DLL

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IP7 SERIES

IP/ETHERNET AUDIO SOLUTIONS

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2-Gang Intercom Panel
Full-Duplex w/ IP Module
IP7-FD-CIS4

Flexible IP7 Series Products power the most demanding intercom and paging applications. Voice-quality audio is delivered over Ethernet/IP in local area (LAN) and wide area networks (WAN). The series' modular, IP edge-device design provides for superior scalability in applications of all sizes - assuring success today and in the future.

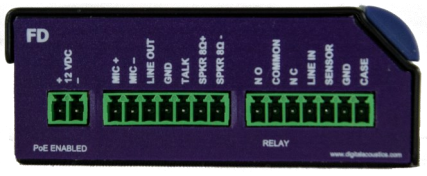
FULL DUPLEX IP INTERCOM

- ◊ **True Full-Duplex Intercom Panel** with Acoustic Echo Cancellation
- ◊ Integrated 8-Watt IP Audio Amplifier with Power over Ethernet (PoE)
- ◊ Connect to VoIP Telephony Systems via SIP 2.0 & TalkMaster EE
- ◊ Multicast Protocol enables seamless, clear, low-bandwidth audio distribution
- ◊ On-Board relay and sensor for door/gate access control and management

Flush Mount Intercom Panel with Full Duplex Support

The Digital Acoustics' IP7-FD-CIS4 is an IP-enabled, PoE-Capable 2 gang vandal resistant call panel designed for Full-Duplex two way audio with door control.

As a network edge device, the IP7-FD-CIS4 is quickly installed and configured using CAT 5/6 cabling from a PoE network switch using Digital Acoustics' TalkMaster Software.



Quick installation in to standard 2-gang electrical boxes provides reliable two-way full-duplex voice communication as well as tones and background music. The heavy-duty stainless steel panel will provide years of service in a wide range of environments.

- High intelligibility from 2.5" speaker and dedicated microphone
- PoE reduces installation labor and materials expense
- Hardened, flush-mount design for demanding indoor/outdoor environments
- Operates over wired, wireless or fiber networks

Applications

- Door/Gate Full-Duplex 2-Way IP Intercom and Access
- Classroom, Building, Campus and District-wide Communication
- Remote Monitoring Talkback
- SIP 2.0 VoIP Phone Systems Integration
- Clear 2-Way Hands-Free Communication

Vertical Markets

- Education
- Government/Military
- Industrial/Facilities
- Security
- Transportation
- VoIP Telephony

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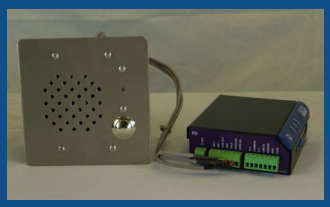
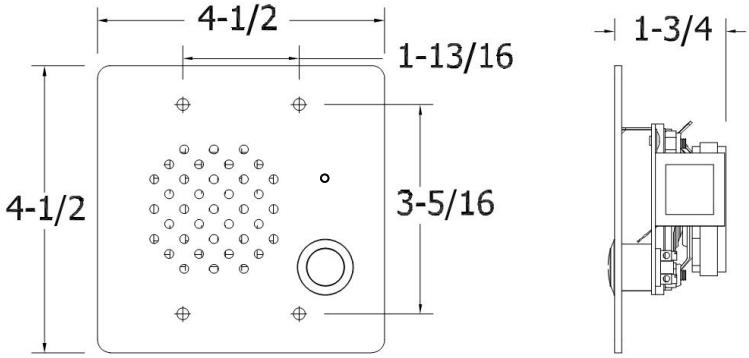


IP7-FD-CIS4

Intercom Panel

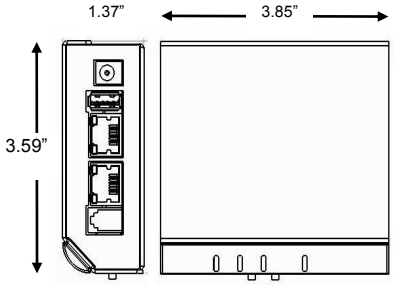
Speaker Type and Size 2 1/2", 8-Ohm
Speaker Power Rating 1 Watt (EIA 462A)
Sensitivity 87 dB SPL at 1 Watt / 1 Meter
Maximum SPL 87 dB SPL at 1 Watt / 1 Meter
Dispersion 90° Included Angle
Frequency Response 200 Hz - 4 kHz (EIA 462A)
Faceplate Material 12 gage brushed stainless steel
Weight 1.5 pounds



IP7-FD Module:

Network Protocols	TCP, UDP, RTP, SIP, ARP, ICMP, IGMP Multicast
Network Interface	10/100 Base-T Ethernet, Auto-MDIX
Network Ports (RJ-45)	2
Core Technology	ICC-256 50 MIPS SoC (System On A Chip)
IP Address Assignment	Static, DHCP
Transport Bandwidth	64kbps Nominal (Voice)
Audio Protocol	G.711. 8/16bit PCM/uLaw
Audio Latency	<200ms
Audio Line In	Nominal 1V p/p
Amplifier Type	Class D, Balanced Transformerless (BTL)
Speaker Out	1 Watt
Microphone	Balanced, Pseudo-Differential / AGC > 40db
External I/O	Relay: 250 VAC / 30VDC @ 60W / 1500 VAC Isolation; Sensor Input: External Active Low
Expansion Bus	I2C for multiple relays, data acquisition sensors, displays, keyboards – requires custom integration.
Power Voltage (Nominal)	12VDC
Power Wattage (Nominal)	15
PoE Standards	802.3af (15.4W)
Diagnostics	LED Status, USB and Power Monitoring
Programming	Flash programmable via USB, Ethernet
Fault Management	Patented Fail-Forward™ fault detection
Connector I/O	3.81 MM DIN Pluggable, RJ45, USB-B, RJ10
Direct Peripheral Support	Mic In, Line In, Speaker, PTT, Relay (NO/NC), Sensor, I2C
Temperature	-30~70 C (Operating), -40 C~85 C (Storage)
Size	3.85 x 3.59 x 1.37 in (98 mm x 91mm x 35mm)

Dimensions are in Inches



Ordering Information

Hardware

IP7-FD-CIS4 IP7-FD Module and Full Duplex Intercom Panel

Accessories

HS-A1 Full-Duplex Handset with Armored Cord
HS-x1 Full-Duplex Handset with Coiled Cord
PNL-BB7 Surface Mount Call Box with Hood

CE FC RoHS COMPLIANT

SOFTWARE APPLICATIONS

◊ **TalkMaster Enterprise Edition -** Multi-console command software for sophisticated installations with 1000's of IP audio end-points. Control and configure intercoms and IP paging amplifiers from central console. Multiple computer consoles can share and control grouped or individual intercoms and paging amplifiers.

◊ **TalkMaster™ SMG - SIP Media Gateway** integrates the TMEE Intercom and Paging System to any SIP Version 2.0 compliant VoIP telephony system.

- Assign Intercom and Paging end-points to telephone extensions.
- Create and manage paging groups.
- Create out-dial extensions so intercoms can call mobile phones.

SOFTWARE DEVELOPMENT KITS

◊ **TMEE Hardware SDK** - For developing client-server or single console applications. The DLL controls the IP Socket connections, provides a "Call Back" mechanism to report events and delivers the raw audio stream allowing your application to playback or transfer it to another computer or device. No GUI elements are included.

◊ **TMEE Console SDK** - Used to create custom Console applications that integrate with TMEE Server. The DLL communicates through the TMEE server for all intercom communications. Each instance of a custom application requires a TMEE Console License. Allows you to leverage all the capabilities of the TMEE Server.

DIGITAL ACOUSTICS ® PRODUCT FAMILY

Intercoms and I/0 Expansion products

ICC™ based IP Paging and Intercom OEM products

Speaker solutions to fit your specific needs

Software Development Kits

Integrate intercom and paging solutions into your application.

TalkMaster Enterprise Edition

- TMEE Hardware DLL
- TMEE Console DLL

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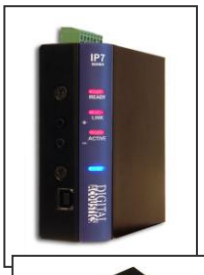
IP PAGING SYSTEMS

- ☑ 8 Watt IP Audio Amplifier with Power over Ethernet (PoE)
- ☑ 20 Watt Audio Amplifier for Higher Output or Multiple Speakers
- ☑ High Output 40 Watt Audio Amplifier for Larger Zones and External Speakers
- ☑ Integrate with VoIP Telephony Systems using embedded SIP 2.0
- ☑ Multicast Protocol enables seamless, clear, low bandwidth audio distribution
- ☑ Supports multiple speaker types and 8Ω and 25/70 Volt Distribution Lines
- ☑ Durable industrial design with DIN rail mount or surface mount

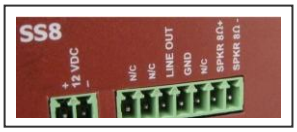


SS40 40 watt Audio Amplifier

- Powers zone of speakers or high output horns
- Class D amplifier design for clear, crisp audio
- Short Circuit and Thermal Protection
- Powered by External 24VDC power source

SS20 20 watt Audio Amplifier

- Powers zone of speakers or high output horn
- Class D amplifier, Single 10/100 Ethernet Port
- Short Circuit and Thermal Protection
- Powered by External 24VAC/DC power source



SS8 8 watt Audio Amplifier

- Power over Ethernet (PoE), 802.3af Compliant
- Powers one or more speakers in a zone
- USB and Ethernet support for setup/ diagnostics

Applications

- Classroom, Campus and District-wide Paging
- Building, Campus, Corporate Communication
- DoD and Homeland Security 'Big Voice' Systems
- Terminal and on-board rail communications
- Remote Monitoring "Talk Down" solutions

Vertical Markets

- Education
- Monitoring
- Transportation
- Industry
- Government

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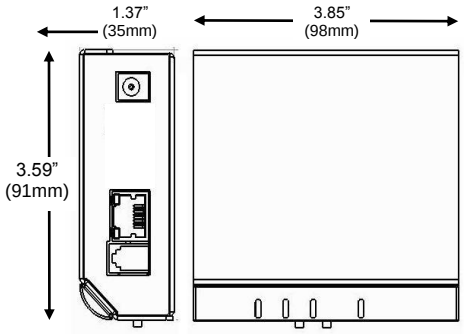
HARDWARE SPECIFICATIONS

	SS8	SS20	SS40
Network Protocols	TCP, UDP, RTP, ARP, ICMP, IGMP MULTICAST		
Network Interface	10/100 Base-T Ethernet, Auto-MDIX		
VoIP Protocols	SIP 2.0		
Core Technology	ICC-256 50 MIPS SoC (System On A Chip)		
IP Address Assignment	Static, DHCP		
Audio Sample Rate	8K Voice - 22K Background Music		
Audio Protocol	G.711. 8/16bit PCM/uLaw		
Audio Latency	<200ms Auto-Adaptive		
Audio Out (8Ω / 25-70V Line)	8 Watts	20 Watts	40 Watts
Power Voltage (Nominal)	12VDC	24VAC/24VDC	24VDC
Power Wattage (Nominal)	12W	50W	60W
PoE Standards	802.3 af	NA	NA
Diagnostics	LED Status, USB, Temperature and Power Monitoring		
Remote Diagnostics	Reporting over USB and Ethernet		
Remote Programming	Flash programmable via USB, Ethernet		
Fault Management	Advanced Fail-Forward™ fault detection		
Connector I/O	3.81 MM DIN Pluggable, RJ45, USB-B		
Temperature	-30~70 C (Operating), -40 C~85 C (Storage)		
Size	3.85 x 3.59 x 1.37 in (98 mm x 91mm x 35mm)		

CE FC RoHS COMPLIANT

PHYSICAL SPECIFICATIONS



Ordering Information:

Hardware

Part #	Audio Out	Pwr	Ethernet	Other
IP7-SS8	8-Watt	PoE	Single	Enhanced I/O
IP7-SS20	20-Watt	AC/DC	Single	Enhanced I/O
IP7-SS40	40-Watt	DC	Single	Enhanced I/O

Includes: DIN Mounting Clip, 3.81 MM Plugs

Software

Part #	Description
TM-LE	Single Console Command Software (Included)
TM-EE	Multi-Console Command Software
TM-SMG	SIP Media Gateway (VoIP Access)

SOFTWARE APPLICATIONS

- **TalkMaster™ LE -** Single console intercom and paging installations. Control and configure all intercoms and paging amplifiers from a single computer. Paging groups easily allow the console operator to send microphone or pre-recorded messages to groups of intercoms.
- **TalkMaster™ Enterprise Edition -** Multi-console command software for sophisticated installations with 1000's of IP audio end-points. Control and configure intercoms and IP paging amplifiers from central console. Multiple computer consoles can share and control grouped or individual intercoms and paging amplifiers.
- **Network Music Software** – Delivers background music or announcements to idle IP7 paging endpoints. Audio Sources may include: CD's audio files or online music services.
- **TalkMaster™ SMG - SIP Media Gateway** integrates the TMEE Intercom and Paging System into any SIP Version 2.0 compliant VoIP telephony system
  - Assign Intercom and Paging end-points to telephone extensions
  - Create and manage paging groups
  - Create out-dial extensions so intercoms can call mobile phones

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- **TMEE Hardware SDK** - For developing client-server or single console applications. The DLL controls the IP Socket connections, provides a "Call Back" mechanism to report events and delivers the raw audio stream allowing your application to playback or transfer it to another computer or device. No GUI elements are included.
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Intercoms and I/0 Expansion products

ICC™ based IP Paging and Intercom OEM products

Speaker solutions to fit specific needs

Software Development Kits

Integrate intercom and paging solutions into your application.

TalkMaster Enterprise Edition

- TMEE Hardware DLL
- TMEE Console DLL

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IP Desktop/Surface Mount INTERCOM SYSTEMS

- ☑ Self contained IP Intercom with integrated speaker and microphone
- ☑ Push to Talk, Volume Controls, and Monitor/Door Release buttons
- ☑ 3.5mm audio connectors supports a headset or specialty microphone
- ☑ Connect to TalkMaster™ LE or TalkMaster™ Enterprise Edition Software
- ☑ Supports cost-effective point-to-point Direct Mode allowing you to connect two intercoms without the need for a Server PC

Desktop IP Intercom

- Simple configuration and easy installation
- Clear, crisp audio using 64 kbps bandwidth
- Utilize existing IP Network Infrastructure
- Operates over wired, wireless or fiber networks

Additional Features

- Surface mount available
- Power over Ethernet (PoE – 802.3af) optional
- Connect to VoIP Systems via TalkMaster™ SIP Media Gateway or eSIP 2.0
- Available in black or white

Applications

- Door/Gate Communication and Access
- Classroom Intercom and Paging
- Building, Campus, Corporate Communication
- Customer Service Support
- Points of Distress Intercom

Vertical Markets

- Education
- Security / Monitoring
- Transportation
- Industry
- Government

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HARDWARE SPECIFICATIONS

Network Protocols TCP, UDP, IP, RTP, ICMP, IGMP, MULTICAST
Network Interface 10/100 Base-T Ethernet, Auto-MDIX
Core Technology ICC-256 50 MIPS SoC (System On A Chip)
IP Address Assignment Static, DHCP
Transport Bandwidth 64kbps Nominal
Audio Protocol G.711. 8/16bit PCM/uLaw
Audio Latency <200 Auto-Adaptive
Audio Line In/Out Nominal 1V p/p
Speaker Out 1 Watt
Microphone On-board Electret with software controlled AGC
Power (Nominal) 7.5 - 9VDC @ 5W
PoE Standards Optional - 802.3af
Diagnostics LED Status, Temperature and Power Monitoring
Programming Flash programmable via Ethernet
Fault Management Advanced Fail-Forward™ fault detection
Temperature -30~70 C (Operating), -40 C~85 C (Storage)
Size 5.3 x 4.0 x 1.35 in (98 mm x 91mm x 35mm)

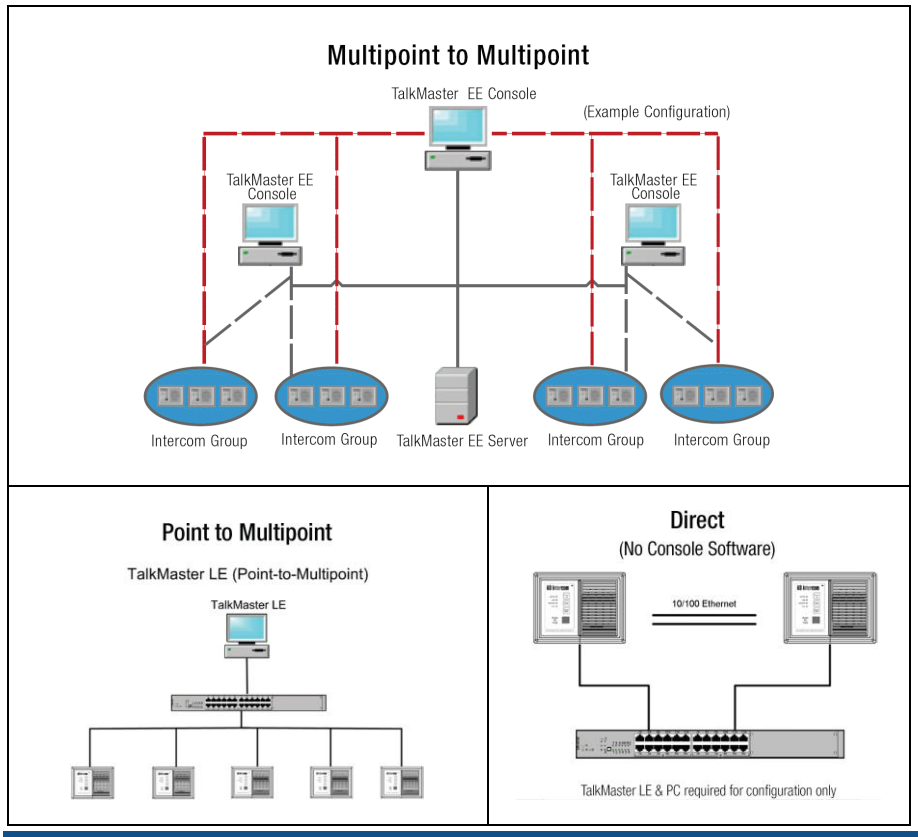
CE FC RoHS COMPLIANT

ORDERING INFORMATION

Hardware Part #	Type	Power	Color
IP7-EDW-110	Desktop	9VDC	White
IP7-EDW-220	Desktop	7.5VDC*	White
IP7-EDW-PoE	Desktop	PoE	White
IP7-ESW-110	Wall	9VDC	White
IP7-ESW-220	Wall	7.5VDC*	White
IP7-ESW-PoE	Wall	PoE	White
IP7-EDB-110	Desktop	9VDC	Black
IP7-EDB-220	Desktop	7.5VDC*	Black
IP7-EDB-PoE	Desktop	PoE	Black
IP7-ESB-110	Wall	9VDC	Black
IP7-ESB-220	Wall	7.5VDC*	Black
IP7-ESB-PoE	Wall	PoE	Black

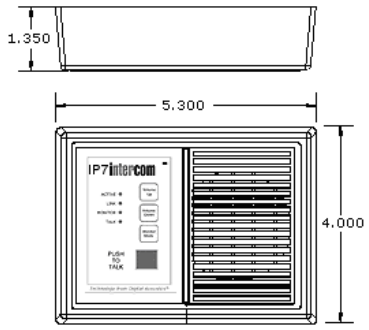
* Specify Country for power plug

DEPLOYMENT SCENARIOS

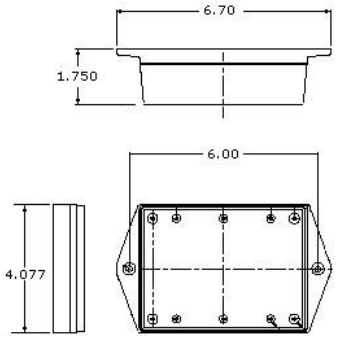


PHYSICAL SPECIFICATIONS

Desktop – IP7-EDx



Surface Mount – IP7-ESx



DIGITAL ACOUSTICS ® PRODUCT FAMILY

Intercoms and I/O Expansion products

ICC™ based IP Paging and Intercom OEM products

Speaker solutions to fit your specific needs

Software Development Kits

Integrate intercom and paging solutions into your application.

TalkMaster™ Enterprise Edition

- TMEE Hardware DLL
- TMEE Console DLL

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IP7 SERIES

IP/ETHERNET AUDIO SOLUTIONS

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Surface Mount Design
SPKR-IP System 1 & 2
SPKR-IP System 1-SE 2-Way
SPKR-IP System 1-SECB 2-Way

Flexible IP7 Series Products power the most demanding intercom and paging applications. Voice-quality audio is delivered over Ethernet/IP in local area (LAN) and wide area networks (WAN). The series' modular, IP edge-device design provides for superior scalability in applications of all sizes - assuring success today and in the future.

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Direct +1 847.604.9256
FAX +1 847.604.9346

IP System 1-SE

IP SPEAKER SYSTEMS

- ☑ Integrated 8 Watt IP Audio Amplifier with Power over Ethernet (PoE)
- ☑ Paging and Talk-Back Speakers
- ☑ Connect to VoIP Telephony Systems via SIP 2.0 & TalkMaster EE
- ☑ Multicast Protocol enables seamless, clear, low bandwidth audio distribution
- ☑ Hardened surface-mount design for demanding indoor environments

Surface Mount Speaker PoE-Enabled with Talkback

The Digital Acoustics' SPKR-IP System 1 is an IP-enabled, PoE-powered 8" surface mount speaker designed for interior audio paging with 2-Way/Talk-back optional.

As a network edge device, the SPKR-IP System 1 is quickly installed and configured using CAT 5/6 cabling from a PoE network switch using Digital Acoustics' TalkMaster Software.

Quick installation to interior walls provides hallway paging of voice, tones and background music. The heavy-duty steel enclosure includes a white epoxy powder coating in square or slant designs.

- High intelligibility from 8" speaker
- PoE reduces installation labor and materials expense
- Designed for challenging surface-mount environments: walls or ceilings
- Built-in IP Amplifier facilitates paging zone and Talk-back management

Applications

- Paging and 2-Way Intercom / Talk-back Solutions
- Classroom, Building, Campus and District-wide Paging
- Emergency Notification and General Announcements
- Scheduled Bells; Education or Shift Change
- SIP 2.0 VoIP Phone Systems Integrated Paging
- Corrections

Vertical Markets

- Education
- Government/Military
- Industrial/Facilities
- Security
- Transportation
- VoIP Telephony

HARDWARE SPECIFICATIONS

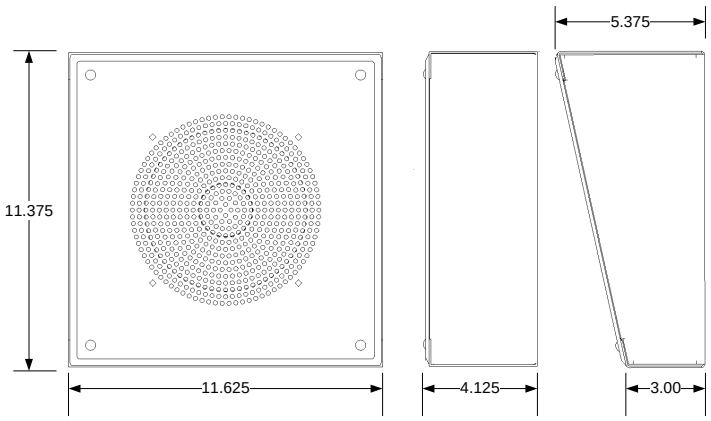
Speaker

Speaker Type and Size 8" , 8-Ohm, Moisture Resistant
Speaker Power Rating 20 watts (EIA 462)
Magnet Type and Weight BeFe Ceramic 10 oz., Nominal
Sensitivity 97 dB SPL at 1 Watt / 1 Meter
Maximum SPL 104 dB SPL at 5 Watts / 1 Meter
Dispersion 100 degrees Included Angle
Frequency Response 80 Hz - 17 kHz (EIA 462)
Weight 5.5 pounds

Integrated IP7-SS8 or SE8 (Two-Way)

Network Protocols TCP, UDP, IP, ARP, ICMP, IGMP, MULTICAST
Network Interface 10/100 Base-T Ethernet, Auto-MDIX
Core Technology ICC-256 50 MIPS SoC (System On A Chip)
IP Address Assignment Static, DHCP
Transport Bandwidth Nominal 64kbps
Audio Protocol G.711. 8/16bit PCM/uLaw
Audio Latency <200ms Auto-Adaptive
Power (Nominal) PoE (15.4W)
PoE Standards 802.3af (15.4W)
Diagnostics LED Status, USB, Temperature and Power Monitoring
Remote Diagnostics Reporting over Ethernet
Remote Programming Flash programmable via Ethernet
Fault Management Advanced Patented Fail-Forward™ process
Connector I/O RJ45
Temperature -30~70 C (Operating), -40 C~85 C (Storage)

PHYSICAL SPECIFICATIONS



Dimensions are in Inches IP System 1 IP System 2

Ordering Information

Hardware

SPKR-IP System 1	IP-Enabled 8" Surface Mount Speaker Square
SPKR-IP System 1-SE	Talkback Enabled
SPKR-IP System 1-SECB	Talkback with Single Gang Call Button
SPKR-IP System 2	IP-Enabled 8" Surface Mount Speaker Slanted
SPKR-IP System 2-SE	Talkback Enabled
SPKR-IP System 2-SECB	Talkback with Single Gang Call Button

SOFTWARE APPLICATIONS

- ❑ **TalkMaster Enterprise Edition -** Multi-console command software for sophisticated installations with 1000's of IP audio end-points. Control and configure intercoms and IP paging amplifiers from central console. Multiple computer consoles can share and control grouped or individual intercoms and paging amplifiers.

- ❑ **TalkMaster™ SMG - SIP Media Gateway** integrates the TMEE Intercom and Paging System to any SIP Version 2.0 compliant VoIP telephony system.
  - Assign Intercom and Paging end-points to telephone extensions.
  - Create and manage paging groups.
  - Create out-dial extensions so intercoms can call mobile phones.

SOFTWARE DEVELOPMENT KITS

- ❑ **TMEE Hardware SDK** - For developing client-server or single console applications. The DLL controls the IP Socket connections, provides a "Call Back" mechanism to report events and delivers the raw audio stream allowing your application to playback or transfer it to another computer or device. No GUI elements are included.

- ❑ **TMEE Console SDK** - Used to create custom Console applications that integrate with TMEE Server. The DLL communicates through the TMEE server for all intercom communications. Each instance of a custom application requires a TMEE Console License. Allows you to leverage all the capabilities of the TMEE Server.

DIGITAL ACOUSTICS ® PRODUCT FAMILY

Intercoms and I/0 Expansion products

ICC™ based IP Paging and Intercom OEM products

Speaker solutions to fit your specific needs

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TalkMaster Enterprise Edition

- TMEE Hardware DLL
- TMEE Console DLL

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IP7 SERIES

IP/ETHERNET AUDIO SOLUTIONS

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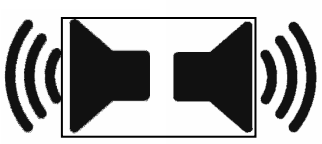
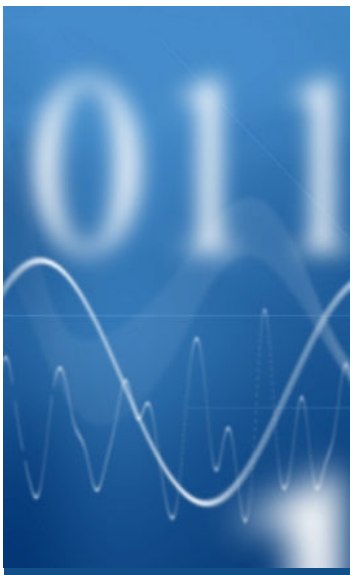


Dual Speaker Design
SPKR-11-BD-P

Flexible IP7 Series Products power the most demanding intercom and paging applications. Voice-quality audio is delivered over Ethernet/IP in local area (LAN) and wide area networks (WAN). The series' modular, IP edge-device design provides for superior scalability in applications of all sizes-- assuring success today and in the future.



IP SPEAKER SYSTEMS

- ☑ Integrated 8 Watt IP Audio Amplifier with Power over Ethernet (PoE)
- ☑ Connect VoIP Telephony Systems via TalkMaster™ SIP Media Gateway (SIP 2.0)
- ☑ Multicast Protocol enables seamless, clear, low bandwidth audio distribution
- ☑ Hardened surface-mount design for demanding indoor environments

Bi-Directional PoE-Enabled Hallway Speaker

The Digital Acoustics SPKR-11-BD-P Bi-Directional Speaker is a completely self-contained system with IP Amplifier and dual speaker cluster. The enclosure projects sound laterally (from the speaker ends) to maximize efficiency and the length of hallway covered.

Single CAT 5/6 cable installation from PoE Switch, no additional wiring is required. Quick installation to interior wall provides hallway paging of voice, tones and background music. The heavy-duty steel enclosure includes a white epoxy powder coating.

- High intelligibility from dual, 4-inch speakers
- Reduces installation labor and materials costs
- Single bi-directional speaker replaces multiple ceiling-mount speakers
- Designed for challenging environments: hallways with hard surface walls or ceilings
- Built-in IP Amplifier facilitates paging zone management
- Wall mounts with four #10 screws, toggle bolts recommended

Applications

- Building, Campus and District-wide Paging
- Corporate Emergency Notification
- SIP 2.0 VoIP Phone Systems Integrated Paging
- Background Music

Vertical Markets

- Education
- Security
- Transportation
- Financial Services

Digital Acoustics, LLC

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Dual Speaker Design
SPKR-11-BD-P

HARDWARE SPECIFICATIONS

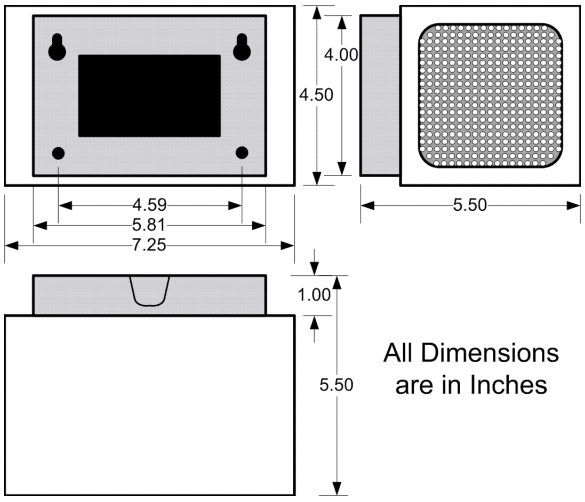
Speaker

Speaker Type and Size 2, 4" Square 4 ohm Moisture Resistant
Speaker Power Rating 10 watts each
Magnet Type and Weight BeFe Ceramic 4.8 oz.
Sensitivity 92 dB SPL at 1 Watt 1 Meter
Maximum SPL 98 dB SPL at 8 Watts 1 Meter
Dispersion 130 degrees
Frequency Response 130 Hz - 9 kHz
Hallway length for optimum coverage 40 – 110 feet
Weight 5.5 pounds

Integrated IP7-SS8

Network Protocols TCP, UDP, IP, ARP, ICMP, IGMP, MULTICAST
Network Interface 10/100 Base-T Ethernet, Auto-MDIX
Core Technology ICC-256 50 MIPS SoC (System On A Chip)
IP Address Assignment Static, DHCP
Transport Bandwidth Nominal 64kbps
Audio Protocol G.711. 8/16bit PCM/uLaw
Audio Latency <200ms Auto-Adaptive
Power (Nominal) PoE (15.4W)
PoE Standards 802.3af (15.4W)
Diagnostics LED Status, USB, Temperature and Power Monitoring
Remote Diagnostics Reporting over Ethernet
Remote Programming Flash programmable via Ethernet
Fault Management Advanced Fail-Forward™ fault detection
Connector I/O RJ45
Temperature -30~70 C (Operating), -40 C~85 C (Storage)

PHYSICAL SPECIFICATIONS



Ordering Information

Hardware
SPKR-11-BD-P IP-Enabled 4" (dual) Bi-Directional Speaker

Software
TM-LE Single Console Command Software (Included)
TM-EE Multi-Console Command Software
TM-SMG SIP Media Gateway (VoIP Access)

SOFTWARE APPLICATIONS

- **TalkMaster Enterprise Edition -** Multi-console command software for sophisticated installations with 1000's of IP audio end-points. Control and configure intercoms and IP paging amplifiers from central console. Multiple computer consoles can share and control grouped or individual intercoms and paging amplifiers.

- **TalkMaster™ SMG - SIP Media Gateway** integrates the TMEE Intercom and Paging System into any SIP Version 2.0 compliant VoIP telephony system.
  - Assign Intercom and Paging end-points to telephone extensions.
  - Create and manage paging groups.
  - Create out-dial extensions so intercoms can call mobile phones.

SOFTWARE DEVELOPMENT KITS

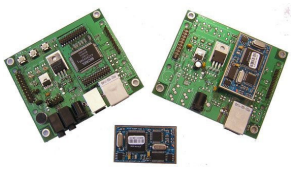
- **TMEE Hardware SDK** - For developing client-server or single console applications. The DLL controls the IP Socket connections, provides a "Call Back" mechanism to report events and delivers the raw audio stream allowing your application to playback or transfer it to another computer or device. No GUI elements are included.

- **TMEE Console SDK** - Used to create custom Console applications that integrate with TMEE Server. The DLL communicates through the TMEE server for all intercom communications. Each instance of a custom application requires a TMEE Console License. Allows you to leverage all the capabilities of the TMEE Server.

DIGITAL ACOUSTICS ® PRODUCT FAMILY

Intercoms and I/0 Expansion products

ICC™ based IP Paging and Intercom OEM products



Speaker solutions to fit your specific needs

Software Development Kits

Integrate intercom and paging solutions into your application.

TalkMaster Enterprise Edition

- TMEE Hardware DLL
- TMEE Console DLL

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IP7 SERIES

IP/ETHERNET AUDIO SOLUTIONS

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Surface Mount Design
SPKR-IP 5-P
SPKR-IP 5-HD
SPKR-IP 5-FD

Flexible IP7 Series Products power the most demanding intercom and paging applications. Voice-quality audio is delivered over Ethernet/IP in local area (LAN) and wide area networks (WAN). The series' modular, IP edge-device design provides for superior scalability in applications of all sizes - assuring success today and in the future.

IP SPEAKER SYSTEMS

- ☑ Integrated 8 Watt IP Audio Amplifier with Power over Ethernet (PoE)
- ☑ Paging, Talkback, and Full Duplex Speakers
- ☑ Connect to VoIP Telephony Systems via SIP 2.0 & TalkMaster EE
- ☑ Multicast Protocol enables seamless, clear, low bandwidth audio distribution
- ☑ Hardened surface-mount design for demanding indoor environments

Surface Mount Speaker PoE-Enabled with Talkback

The Digital Acoustics' SPKR-IP 5 is an IP-enabled, PoE-powered 8" surface mount speaker designed for interior audio paging with 2-Way/Talkback and Full Duplex options.

As a network edge device, the SPKR-IP 5 is quickly installed and configured using CAT 5/6 cabling from a PoE network switch using Digital Acoustics' TalkMaster Software.

Quick installation to interior walls provides reliable paging of voice, tones and background music. The heavy-duty steel enclosure includes a white epoxy powder coated front with black powder coated rear.

- High intelligibility from 5 ¼" speaker
- PoE reduces installation labor and materials expense
- Designed for challenging surface-mount environments: walls or ceilings
- Built-in IP Amplifier facilitates paging zone and Talkback management

Applications

- Paging and 2-Way Intercom / Talkback Solutions
- Classroom, Building, Campus and District-wide Paging
- Emergency Notification and General Announcements
- Scheduled Bells; Education or Shift Change
- SIP 2.0 VoIP Phone Systems Integrated Paging
- Clear 2-Way Hands-Free Communication

Vertical Markets

- Education
- Government/Military
- Industrial/Facilities
- Security
- Transportation
- VoIP Telephony

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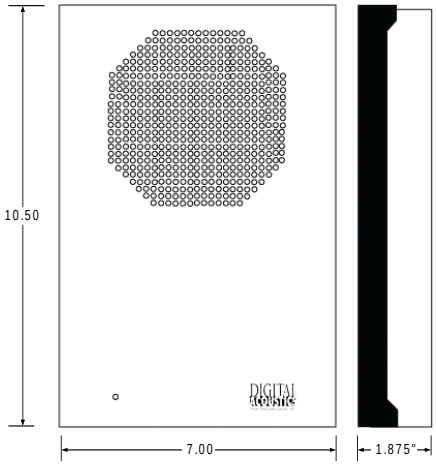
SPKR-IP 5

Speaker

Speaker Type and Size 5 ¼ ", 8-Ohm
Speaker Power Rating 10 watts (EIA 462A)
Magnet Type and Weight BeFe Ceramic 4.8 oz.
Sensitivity 91 dB SPL at 1 Watt / 1 Meter
Maximum SPL 97 dB SPL at 4 Watts / 1 Meter
Dispersion 90° Included Angle
Frequency Response 100 Hz - 10 kHz (EIA 462A)
Weight 4.5 pounds



Dimensions are in Inches

Integrated IP7 Modules:

SS8 (One-Way), SE8 (Two-Way), or FD (Full Duplex)

Network Protocols TCP, UDP, SIP, RTP, ARP, ICMP, IGMP Multicast
Network Interface 10/100 Base-T Ethernet, Auto-MDIX
Core Technology ICC-256 50 MIPS SoC (System On A Chip)
IP Address Assignment Static, DHCP
Transport Bandwidth Nominal 64kbps
Audio Protocol G.711. 8/16bit PCM/uLaw
Audio Latency <200ms
Power (Nominal) PoE (15.4W)
PoE Standards 802.3af (15.4W)
Diagnostics LED Status, USB, Temperature and Power Monitoring
Remote Diagnostics Reporting over Ethernet
Remote Programming Flash programmable via Ethernet
Fault Management Patented Fail-Forward™ fault detection
Connector I/O Network: RJ45, 3.81mm Pluggable Connectors
Temperature -30~70 C (Operating), -40 C~85 C (Storage)

Ordering Information

Hardware

SPKR-IP 5-P	IP-Enabled 5" Surface Mount Speaker
SPKR-IP 5-HD	Talkback Enabled
SPKR-IP 5-FD	Full Duplex w/ Echo Cancellation

Accessories

PNL-CIB2	1 Gang Call Button [Vandal Resistant]
PNL-CIB6	2 Gang Call Button [Vandal Resistant]
PNL-CIB8	Door Mullion Call Button [Vandal Resistant]

SOFTWARE APPLICATIONS

- **TalkMaster Enterprise Edition -** Multi-console command software for sophisticated installations with 1000's of IP audio end-points. Control and configure intercoms and IP paging amplifiers from central console. Multiple computer consoles can share and control grouped or individual intercoms and paging amplifiers.

- **TalkMaster™ SMG - SIP Media Gateway** integrates the TMEE Intercom and Paging System to any SIP Version 2.0 compliant VoIP telephony system.
  - Assign Intercom and Paging end-points to telephone extensions.
  - Create and manage paging groups.
  - Create out-dial extensions so intercoms can call mobile phones.

SOFTWARE DEVELOPMENT KITS

- **TMEE Hardware SDK** - For developing client-server or single console applications. The DLL controls the IP Socket connections, provides a "Call Back" mechanism to report events and delivers the raw audio stream allowing your application to playback or transfer it to another computer or device. No GUI elements are included.

- **TMEE Console SDK** - Used to create custom Console applications that integrate with TMEE Server. The DLL communicates through the TMEE server for all intercom communications. Each instance of a custom application requires a TMEE Console License. Allows you to leverage all the capabilities of the TMEE Server.

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- TMEE Hardware DLL
- TMEE Console DLL

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DIGITAL ACOUSTICS TALKMASTER ENTERPRISE EDITION

The Power of Enterprise Networking for your Command Communications

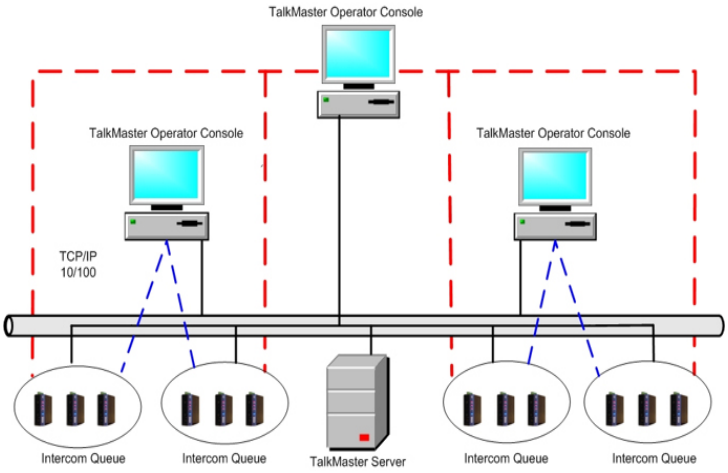
Multi-Operator
Multi-Site
World Class

Overview

TalkMaster™ EE is a server-based solution designed to manage up to 1,500 intercom and paging end-points distributed over an IP (Internet Protocol) network. Digital Acoustics IP7 Intercom and Paging End-points integrate seamlessly with TalkMaster™ EE to form a robust IP based communications infrastructure that can easily and cost-effectively span **buildings, campuses, and oceans**. Whether you are keeping your assets secure or people informed, the Digital Acoustics IP solution will provide the reliability and scalability to meet current and future demands. Our simple software based management tools allow you to flexibly assign call and paging groups and handle events from anywhere with an internet connection. The user interface is simple and intuitive, keeping employee training to a minimum while being powerful enough to fulfill the needs of today and the unforeseen opportunities of tomorrow.

New Feature Highlights

- Listen for unusual activity on groups of Endpoints using the **Monitoring Feature**. Sound Level meters for each End-point help to pinpoint the activity
- Control **Background Music** by toggling on/off the Back-ground Music option for individual Endpoints from the Operator Console
- Support for backwards compatibility on Partner applications makes for trouble free TalkMaster™ upgrades.
- Simplified operator training with the ability to customize the Operator Console display



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salesinfo@digitalacoustics.com

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www.DigitalAcoustics.com

Fail-Forward ™

Digital Acoustics' patented Fail Foward™ technology gives intelligence to both TalkMaster™ Operator Consoles and IP7 devices should the Primary TalkMaster™ Enterprise Server go off-line. Both Consoles and Devices will automatically seek out up to three backup TMEE Servers to keep communications online and your system operational.

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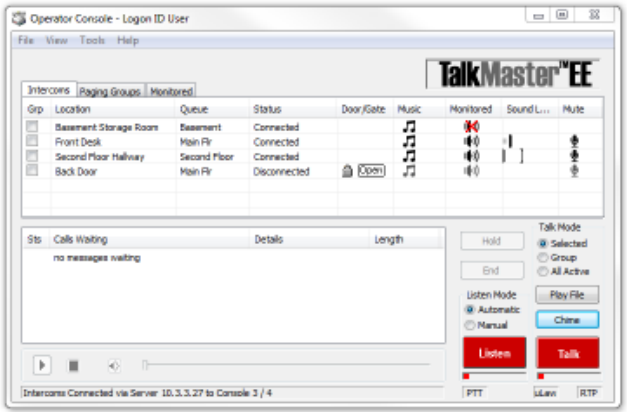


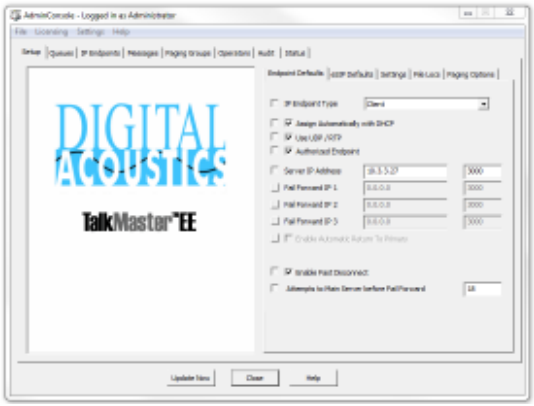
Operator Console

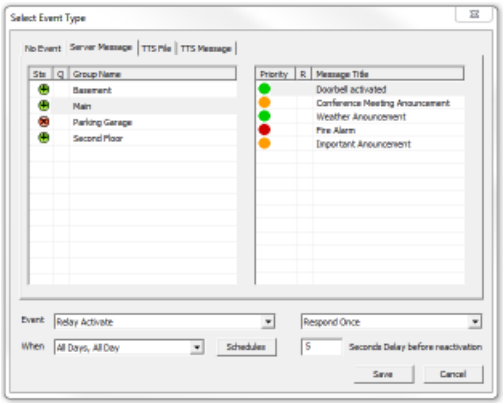
The Operator Console provides the ability for authorized personnel to manage Intercom calls, Monitor (listen to) multiple IP Endpoints and send live or pre-recorded Messages to Paging Groups. Through thoughtful system design and service level identification, TalkMaster EE can be configured to make sure no call goes unanswered.

Administrator Console

Manage all aspects of the IP Endpoint and TMEE Server options using the Admin Console.

- Define Queues to create logical groups of Intercoms. Queues include the ability to "overflow" to additional Operators based on the age and/or quantity of unanswered calls
- Define pre-recorded audio Messages for emergency or non-emergency situations
- Define authorized users and their roles… and much, much, more!





Event Console

Create rules to automate events (audio messages and calls) generated by motion detectors, panic buttons, contact closures, ground loops, etc.

- Create rules to monitor IP7 events such as Incoming Calls or Sensor Activations
- Specify audio responses to be sent to Paging Groups using pre-recorded Messages or generate Text-to-Speech
- Messages can be played once or repeated until acknowledged

Additional Features

Text To Speech Console

- Automatically generate audio messages via simple text files. TalkMaster™ converts text into speech and sends that audio to designated Paging Groups with both **automated and manual activation**

Archive Viewer Console

- Locally or remotely review the **TalkMaster Audit Log** which records all Intercom and Paging activity as well as play back Intercom or Paging audio recorded by the **Integrated Audio Archiving Feature**

Firmware Management Console

- Remotely manage IP Endpoints to take advantage of new IP Endpoint features

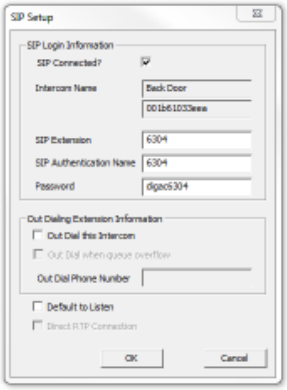
Calendaring/Scheduled Announcements

- Bell Commander Software, available from Acrovista Software, interfaces with TalkMaster EE to provide automated scheduled audio notifications for classroom and factory scheduling

VOIP Integration : SMG Console

IP Endpoints interact with a SIP 2.0 capable phone system by assigning extension numbers to one or more IP End-points

- Receive incoming Intercom calls on a phone. Use the phone system's capabilities to have the call ring on multiple phones
- Use a phone to initiate a live or queued audio page to groups of IP Endpoints



System Requirements

TMEE Server	Operator Console
Windows 7, Windows 2003 Server (32-bit or 64-bit) **Windows 2008 Server**	**Windows XP, Windows 7** (32-bit or 64-bit)
Pentium IV or Better (dual core recommended)	**Pentium IV or Better**
2 GB RAM	**2 GB RAM**
20 MB Hard Disk (Plus Archived Audio stor-age requirements)	**20 MB Hard Disk**
Windows Sound Card	**Windows Sound Card**

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DIGITAL ACOUSTICS

IP7 SERIES

IP/ETHERNET AUDIO SOLUTIONS

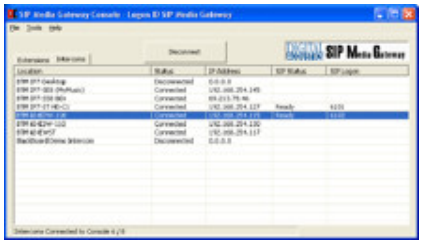
. . . clearly making waves

Digital Acoustics' SIP Media Gateway (SMG) interfaces IP7 Intercom and Paging End-Points to SIP 2.0-capable VoIP Phone Systems. SMG facilitates intercom, overhead paging and door/gate release operations from central office telephones or remotely using mobile phones. The modular, IP edge-device design provides for superior scalability in applications of all sizes--assuring success today and in the future.

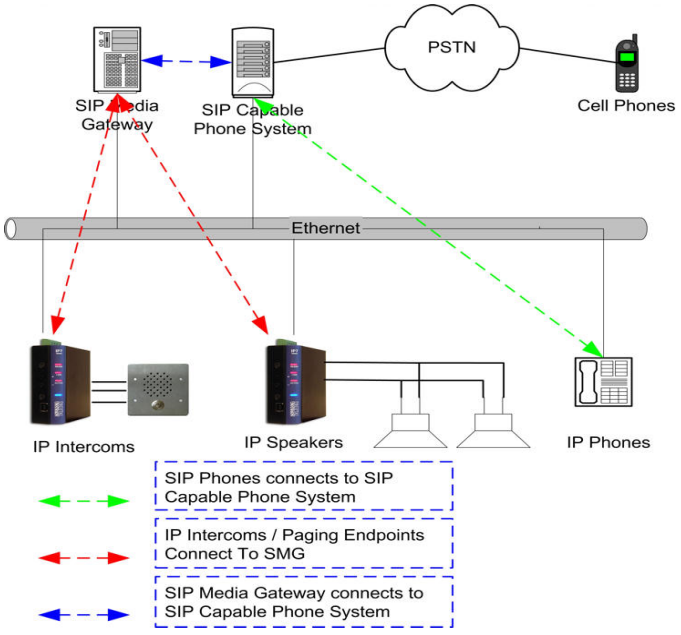
VoIP – SIP Media Gateway

Intercom and Paging VoIP Software bridge

- ☑ Manage IP Intercom and Paging communications anywhere there is a phone
- ☑ Roll-over intercom calls to cell phones
- ☑ Activate door/gate access via phone key pad
- ☑ Make overhead pages to pre-configured zones
- ☑ Integrates with TalkMaster Enterprise Edition Server or operates Stand-Alone



- SMG runs on a standard Windows® PC
- Intercoms and Paging Endpoints are assigned extensions numbers on the SIP phone system
- Paging Endpoints can be grouped together and assigned a single extension number
- Intercoms can place calls to extension numbers or phone numbers through the SIP Phone system
- SIP Phone system can call any extension number assigned in SMG



Features

- Easy setup and configuration
- SMG runs Standalone or as a Console connected to TMEE Server
- Use Phones to answer and converse with IP Intercom
- Transfer calls to mobile phones
- Use a single SIP Extension to page a group of Intercoms or Paging Endpoints
- Compatible with SIP 2.0 compliant VoIP phone systems

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SOFTWARE SPECIFICATIONS

System Requirements*

- Pentium IV Processor
- Windows® XP or greater
- 1 GB RAM
- 20 MB Hard Drive
- 1 available USB Port (Stand-Alone version)

Phone System

- SIP V2.0 compliant VoIP phone systems
- RFC 3261

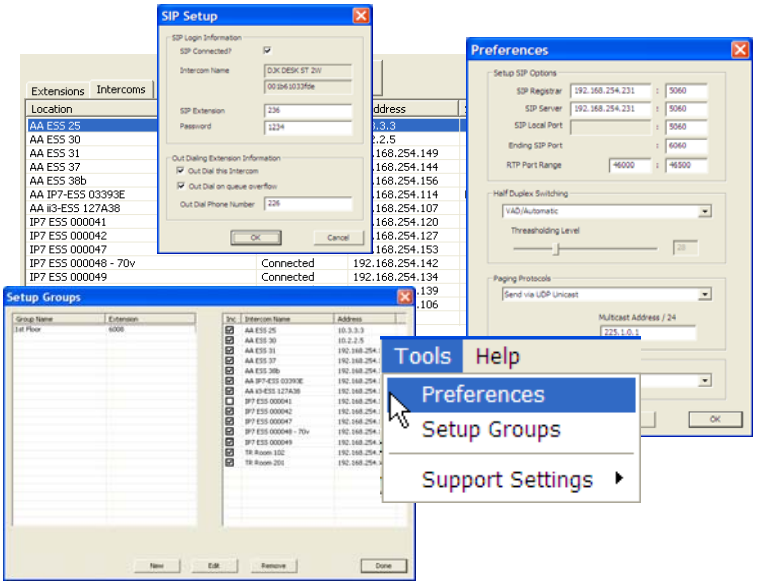
Network Protocols used for Paging

- TCP, UDP, Broadcast, IGMP Multicast

Software Capabilities Overview

- Answer or initiate IP Intercom Calls from an IP Phone or Cell phone via the SIP V2.0 compliant phone system
- Route calls to a TMEE Operator Console, then to a mobile phone (only with SW SMG-EE)
- Open Door/Gate via phone keypad
- Page to IP Intercoms/Endpoints from an IP Phone via the SIP V2.0 compliant phone system

* These are the Minimum System Requirements. Hardware Requirements increase based on system complexity, system size and desired performance



Ordering Information:

Part #	Description
SW SMG-SA	SIP Media Gateway Stand-Alone provides integration of the IP Intercoms with a SIP based phone system
SW SMG-EE	SIP Media Gateway Console provides integration of the IP Intercoms with both TMEE Server software and a SIP based phone system

SOFTWARE APPLICATIONS

- **TalkMaster Enterprise Edition -** Multi-console command software for sophisticated installations with 1000's of IP audio end-points. Control and configure intercoms and IP paging amplifiers from central console. Multiple computer consoles can share and control grouped or individual intercoms and paging amplifiers. Paging groups easily allow the console operator to send microphone or pre-recorded messages to groups of intercoms

- **TalkMaster LE -** Single console intercom and paging installations. Control and configure all intercoms and paging amplifiers from a single computer. Paging groups easily allow the console operator to send microphone or pre-recorded messages to groups of intercoms

SOFTWARE DEVELOPMENT KITS

- **TMEE Hardware SDK** - For developing client-server or single console applications. The DLL controls the IP Socket connections, provides a "Call Back" mechanism to report events and delivers the raw audio stream allowing your application to playback or transfer it to another computer or device. No GUI elements are included.

- **TMEE Console SDK** - Used to create custom Console applications that integrate with TMEE Server. The DLL communicates through the TMEE server for all intercom communications. Each instance of a custom application requires a TMEE Console License. Allows you to leverage all the capabilities of the TMEE Server.

DIGITAL ACOUSTICS® PRODUCT FAMILY

Intercoms and I/O Expansion products

ICC™ based IP Paging and Intercom OEM products

Speaker solutions to fit your specific needs

Software Development Kits

Integrate intercom and paging solutions into your application.

TalkMaster Enterprise Edition

- TMEE Hardware DLL
- TMEE Console DLL

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Intercom, Paging & Mass Notification

Digital Acoustics provides world-class internet protocol (IP) communications solutions that help protect people and property. The company's products include IP based intercom, paging and mass notification devices as well as the command and control software that drives them.

Digital acoustics manufactures a wide range of IP enabled Intercoms and Paging Speakers to meet your campus communication needs.

DIGITAL ACOUSTICS

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Our Core Products Include:

- Intercoms & Door Stations with Access Control
- 1 & 2-Way Paging Speakers
- IP Enabled Paging Amplifiers
- Full Range of Call Stations, Speakers, and Horns
- SIP 2.0 Compatability for VOIP Phone Systems

TalkMaster MMC - Coherent Command & Control

Manage All Your Notifications from One Console.

- 2-Way Intercom
- Paging – Near & Wide Area
- 2-Way Radio & Cellular
- Automated Events
- Email, SMS, POTS with Delivery Verification
- Digital Signage Support
- Single Button Execution (Macro Builder)

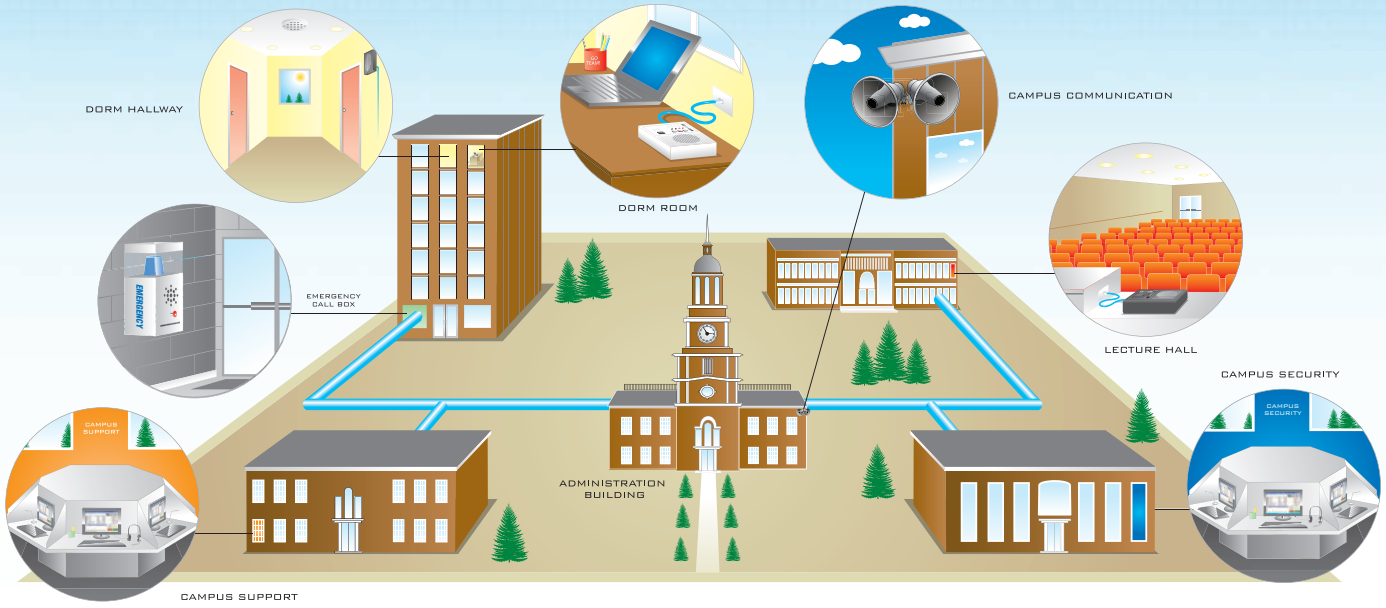
TalkMaster Software

- Complete Intercom and Paging Control
- Event Console –Automated, Event and Time Drive Actions
- Live, Pre-Recorded, and Scheduled Messages
- Multiple Operators and Console Locations

VOIP Integration

- Native Integration with SIP 2.0 Phone Systems
- Individual or Grouped Paging Zones
- 1 and 2-Way Audio Support

Support & Safety Network for Education



Some of our customers include:

- University of Notre Dame
- University of Chicago
- Northern Illinois University
- Nova Southeastern University
- Maricopa Community Colleges
- University of North Carolina – Charlotte
- City Colleges of Chicago
- University of Alabama
- Texas Tech University
- University of Texas
- Eastern Iowa Community Colleges
- University of Maryland
- SUNY

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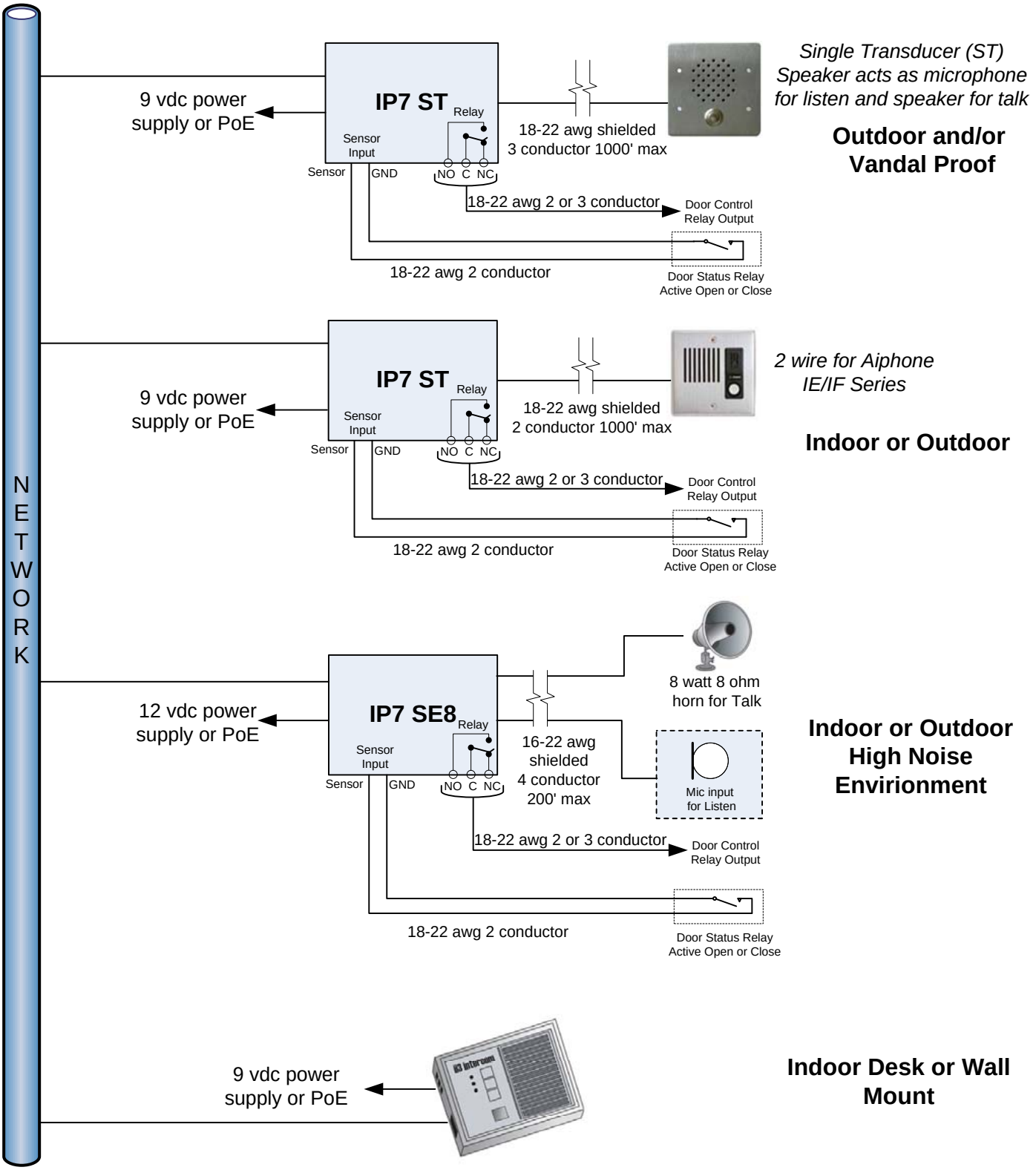
Digital Acoustics IP7 Products for Intercom Applications


NETWORK
9 vdc power supply or PoE
IP7 ST
Relay
Sensor Input
Sensor
GND
NO C NC
18-22 awg shielded 3 conductor 1000' max
18-22 awg 2 or 3 conductor
Door Control Relay Output
18-22 awg 2 conductor
Door Status Relay Active Open or Close
Single Transducer (ST) Speaker acts as microphone for listen and speaker for talk
Outdoor and/or Vandal Proof
9 vdc power supply or PoE
IP7 ST
Relay
Sensor Input
Sensor
GND
NO C NC
18-22 awg shielded 2 conductor 1000' max
18-22 awg 2 or 3 conductor
Door Control Relay Output
18-22 awg 2 conductor
Door Status Relay Active Open or Close
2 wire for Aiphone IE/IF Series
Indoor or Outdoor
12 vdc power supply or PoE
IP7 SE8
Relay
Sensor Input
Sensor
GND
NO C NC
8 watt 8 ohm horn for Talk
16-22 awg shielded 4 conductor 200' max
Mic input for Listen
18-22 awg 2 or 3 conductor
Door Control Relay Output
18-22 awg 2 conductor
Door Status Relay Active Open or Close
Indoor or Outdoor High Noise Envirionment
9 vdc power supply or PoE
Indoor Desk or Wall Mount

Client:	Project:
COMPANY: Digital Acoustics	CREATOR:
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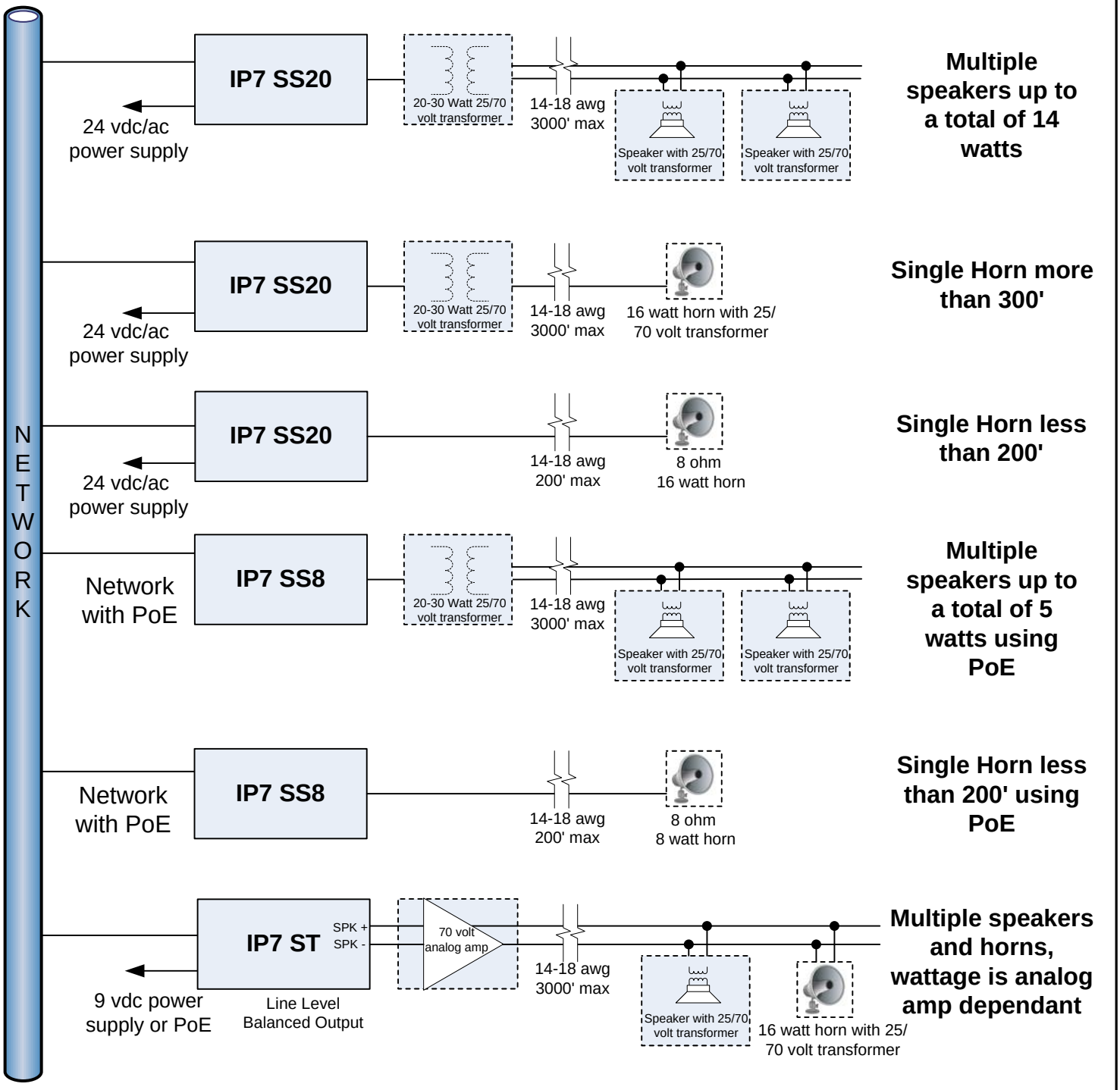
DIGITAL ACOUSTICS CORPORATION

Digital Acoustics IP7 Products for Paging Applications


NETWORK
IP7 SS20
24 vdc/ac power supply
20-30 Watt 25/70 volt transformer
14-18 awg 3000' max
Speaker with 25/70 volt transformer
Speaker with 25/70 volt transformer
Multiple speakers up to a total of 14 watts
IP7 SS20
24 vdc/ac power supply
20-30 Watt 25/70 volt transformer
14-18 awg 3000' max
16 watt horn with 25/ 70 volt transformer
Single Horn more than 300'
IP7 SS20
24 vdc/ac power supply
14-18 awg 200' max
8 ohm 16 watt horn
Single Horn less than 200'
Network with PoE
IP7 SS8
20-30 Watt 25/70 volt transformer
14-18 awg 3000' max
Speaker with 25/70 volt transformer
Speaker with 25/70 volt transformer
Multiple speakers up to a total of 5 watts using PoE
Network with PoE
IP7 SS8
14-18 awg 200' max
8 ohm 8 watt horn
Single Horn less than 200' using PoE
IP7 ST
SPK +
SPK -
70 volt analog amp
9 vdc power supply or PoE
Line Level Balanced Output
14-18 awg 3000' max
Speaker with 25/70 volt transformer
16 watt horn with 25/ 70 volt transformer
Multiple speakers and horns, wattage is analog amp dependant

Client:	Project:
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CASE STUDY:

Digital Acoustics IP Intercoms Improve Support for UNC Charlotte

No Signal

Ten minutes into a video during Professor Olson's film-studies lecture, the projector flashes "no signal" on a blank screen. With 200 students waiting, the professor attempts a "quick fix," but after 15 minutes of pressing buttons and rearranging projector cables without success, gives up. Class dismissed. He heads back to his office intending to report the problem, but is intercepted by a student and promptly forgets about the projector. The next day, after three more instructors are unable to complete their classes, the Office of Classroom Support finally is notified of the malfunctioning projector.

Steve Clark was facing a dilemma. As Interim Director of Classroom Support at the University of North Carolina at Charlotte, Clark is charged with providing technical support to 20,000 students and 1,400 faculty members across a sprawling 1,000-acre campus. With such a large user base scattered among 74 buildings, the existing one-way message system connecting classrooms with the support center was proving to be a bottleneck. In addition to problems going unreported, if professors did contact the help desk to report technical difficulties, the descriptions were insufficient to solve the problem without going on-site. "Our people were running into classrooms with no idea as to what the problem was," Clark relates. If the solution required a replacement part, or a special diagnostic tool, a trip back to the support center might be necessary. This resulted in longer periods of class disruption, and even cancellation. Clark's goal of keeping turnaround on service requests to less than 24 hours was proving elusive, and faculty complaints about the delays were increasing. Hence his dilemma: how to maintain campus equipment so that classes aren't disrupted or cancelled, instructors are satisfied, and his small technical staff is deployed effectively? How to lower his department's average response time to less than 10 minutes?

Simple-to-Use Communication System

In an effort to improve the technology support UNC Charlotte educators receive, Clark began to search for a cost-effective intercom system. "Our hope was to establish a simple-to-use, two-way communication system with our classrooms. We evaluated PC-based software solutions that required extra microphones, individual configurations and extensive user training, as well as various network-based intercom systems with some nice features, but which usually required an expensive hardware infrastructure."

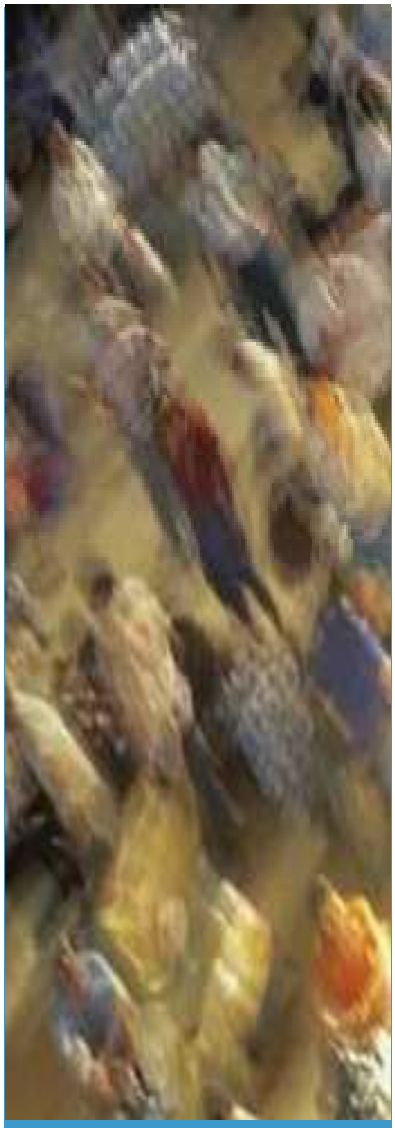
The ii3 Internet Protocol (IP) Intercom from Digital Acoustics was the solution to Clark's dilemma. "Since many of our classrooms don't have PCs, we realized a software solution would not meet our requirements. And Classroom Support needed an inexpensive hardware solution. We chose the Digital Acoustics product because configuration is extremely simple, the cost is cheaper than adding new equipment to the network, and installation is as simple as plug and play."

Support at the Push of a Button

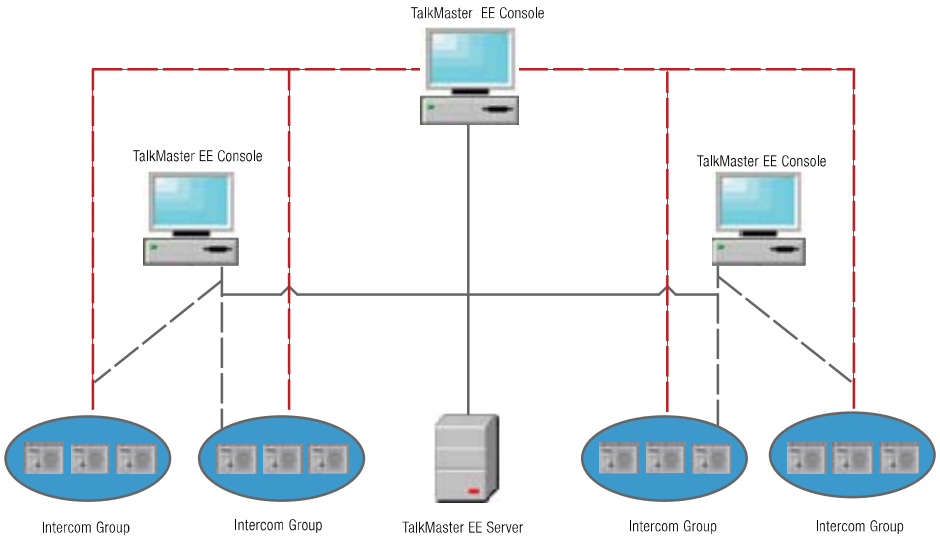
The Office of Classroom Support installed 100 ii3 IP Intercoms in classrooms across campus, providing educators with the equivalent of a standard Push-to-Talk Intercom. Plugged into UNC Charlotte's existing local and wide area networks, the intercoms provide instant two-way communication between the classroom and the help desk using standard network audio protocols.

To complete the picture, the Digital Acoustics TalkMaster™ PC Server application provides central command and control functions, allowing multiple PCs to manage two-way communications easily among many intercom units. "The Digital Acoustics intercoms leverage our existing infrastructure, and TalkMaster provides the scalability and failover capabilities that are absolutely essential for a campus-wide support operation," says Clark. "And with Digital Acoustics software providing multiple console support, we can use more than one PC to monitor calls." The software also provides the means to record and queue help requests, which are processed in turn as support staff become available.

DIGITAL ACOUSTICS



Using the Digital Acoustics intercoms, UNC Charlotte educators send problem reports directly to Clark's support staff with the push of a button. Now, to report the malfunctioning data projector, Professor Olson would simply press the intercom's "Talk" button, and within seconds, be speaking with a trained support representative. After asking a few questions, the support person would determine that a service call is needed and dispatch a technician to the room. Instead of having to cancel class, a professor can have help on the way within 5-10 minutes, interrupting the session just long enough for the problem to be diagnosed and repaired. "By making support 'one-button easy' instructors do not hesitate to report problems as they happen, minimizing the disruption students experience," says Clark.



In this way, the ii3 Intercom system saves Clark's staff both time and resources. With two-way communication, the Office of Classroom Support is able to start addressing the problem immediately upon notification. For some requests, help desk personnel are able to use their Virtual Network Computing remote control system to solve a PC or equipment problem directly over the network. As Clark comments, "Without exception our biggest success is being able to support classrooms and allow instruction to continue without having to leave the office." And if a problem does require a classroom visit, the support technician can proceed with some understanding of what the solution may be when they arrive.

10-Minute Response Time Achieved

With the help of the Digital Acoustics Intercom Solution, the nine-member Office of Classroom Support team now strives to answer all support calls within 10 minutes, delivering rapid responses that avoid disruption for students and faculty. With his staff responding to an average of 75 requests per week, Clark observes: "No one likes having technology problems while they're trying to teach a class. The Digital Acoustics intercoms are easy enough to use that faculty do not hesitate to request help, and receive the needed assistance in a timely fashion."

With instructors reporting they are "extremely happy" with the improved response time, a top priority for UNC Charlotte is to place ii3 IP Intercoms in the majority of classrooms on campus, as well as at satellite locations. With 100 units installed, Clark's goal is to reach 80 percent saturation, including classrooms with minimal technology as well as high-tech locations. "I can think of no better way to let faculty know that support is available than by providing a one-button help request system with the ease of use that this one offers," says Clark.

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